

5 What is claimed is:

1. A method for treating ocular hypertension in a human eye comprising implanting a stent having an interior flow passageway between a region of the subconjunctival plane proximate the lymphatic vessel network and a region of the uveoscleral plane.

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2. A method as in claim 1 wherein the stent is implanted to extend from a portion of the subconjunctival plane radially inward of the circumferential lymphatic vessels to the region of the uveoscleral plane.

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3. A method as in claim 2 wherein the stent is implanted to extend within the subconjunctival plane proximate the limbus at about 6 o'clock or 12 o'clock.

4. A method as in claim 1 wherein the stent is provided with a shape memory polymer end portion that is capable of moving to its memory shape in the uveoscleral plane.

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6. A method as in claim 1 wherein the stent is provide with a shape memory polymer end portion that is capable of moving to its memory shape in the subconjunctival plane.

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7. A method for controlling intraocular pressure (IOP), the method comprising implanting a stent body with at least one flow channel therein between the interior of the eye and the subconjunctival plane proximate the lymphatic vessel network wherein the lymphatic system naturally controls outflows and IOP.

5           8. A method for controlling IOP as in claim 7 wherein the implanting step provides a fenestrated outflow end in the stent body that extends generally circumferentially in the subconjunctival plane proximate the lymphatic network.

10         9. A method for controlling IOP as in claim 7 including the step of identifying the lymphatic network by dye injection prior to the implanting step for selecting the site for the outflow end of the stent body.

15         10. A method for controlling IOP as in claim 7 further including the step of implanting a fenestrated inflow end of the stent in a site selected from the uveoscleral plane, anterior chamber, ciliary body, the region of Schlemm's canal, or within tissue about the angle of the anterior chamber.

20         11. A stent for treating ocular hypertension in a human eye comprising a stent body of a polymer, the stent body having a first end and a second end with at least one flow pathway extending between openings in said first and second ends, the stent body dimensionally configured for extending from a region of the subconjunctival plane proximate to the lymphatic vessel network to the interior of the eye.

25         12. A stent as in claim 11 wherein the stent body is at least partially of a shape memory polymer.

13. A stent as in claim 11 wherein the stent body has at least one end portion of a shape  
memory polymer capable of a temporary reduced cross-sectional shape and a memory expanded cross-sectional  
shape.

5           14. A stent as in claim 11 wherein the stent body has at least one end portion with a plurality  
of micro-apertures that communicate with the at least one flow pathway.

15           15. A stent as in claim 11 wherein the micro-apertures have a dimension across a principal  
axis ranging from 0.1 to 25 microns.

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16. A stent as in claim 11 wherein the stent body is of a transparent polymer.

17. A stent as in claim 13 wherein a section of a least one end portion of the stent body is of a  
biodegradable shape memory polymer.

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18. A lumened stent for reducing ocular hypertension, the stent body of a shape memory  
polymer (SMP) dimensionally configured for extending between the subconjunctival plane inward of the eye's  
lymphatic drainage system and a region of the uveoscleral plane.

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19. A stent as in claim 18 wherein at least one flow pathway within the stent body is within a  
photo-modifiable polymer portion for post-implant modification of the flow capacity of the at least one pathway.

20. A stent as in claim 18 wherein the stent body carries at least one light-responsive marker  
element for localizing the photo-modifiable polymer portion.

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21. A method of making a stent for treating ocular hypertension, the method comprising  
utilizing soft lithographic polymer microfabrication means to assemble a stent with micro-fenestrated first and

- 5 second stent ends with at least one interior flow channel communicating with the micro-fenestrations of the first and second ends.

22. A method of fabricating a biomedical stent as in claim 21 wherein the stent is microfabricated at least partly of a shape memory polymer.